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North Slope of Alaska ARM Facilities
Monthly Status Update
Sandia National Labs

January 2018

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1 North Slope Facilities Management Executive Summary and Major Issues

This monthly report is intended to communicate the status of North Slope ARM facilities managed by Sandia National Labs.

Operations Team

* Mark Ivey- ARM Alaska Sites Manager (SNL)
* Fred Helsel- Barrow and AMF3 Site Manager (SNL)
* Darielle Dexheimer- Tethered Balloon Operations (SNL)
* Valerie Sparks- ARM Project Office (SNL)
* Martin Stuefer- Rapid Response Team (UAF)
* Randy Peppler- ARM DQ Office Manager (OU)

2 Budget

FY2017 Financials (as of January 26, 2018)

	December	YTD
Carryover funds	$5,078,053	
Funds Allocated YTD	$2,373,000	
Carryover plus YTD funds	$7,451,053	
Cost, burdened amount	$2,220,400	
Uncosted Funds	$5,230,653	
Commits, burdened total	$2,413,741	
Current fiscal year uncommitted funds	$2,816,912	
Subsequent fiscal year (SFY)commits	$348,924	
Total uncommitted funds, including SFY commits	$2,467,988	
Fully Burdened Staff Costs	$331,000	
Fully Burdened Contract Costs	$355,000	
Fully Burdened Total Costs	$686,000	$2,220,000

3 Safety

AMF3- No incident/Injury

Barrow - No Incident/Injury

4 Instrument Status – Provided by Martin Stuefer

AMF3

INFORMAL AMF3 INSTRUMENT STATUS REPORT FOR January 19 - January 26, 2018

BRIEF STATUS OF INSTRUMENTS AND SITE IN OLIKTOK AS OF 2018/01/26:

Facilities Operational

Data Systems Operational

Vehicles Partly Operational

Desktop Computers Operational

SKYRAD - SKY Radiometer on Stand for downwelling Operational

MFRSR - Multifilter Rotating Shadowband Radiometer Not Operational

GNDRAD - Ground Radiometer on Stand for Upwelling Operational

MFR2.5m - Multifilter Radiometer at 2.5m height Not Operational

MAWS - Automatic Weather Station Operational

MET - Surface & Tower Meteorological Instruments Operational

CMH - Chilled Mirror Hygrometer Operational

AMC - Soil, up/downwelling radiation measurements Operational

ECOR - Eddy Correlation Flux System Operational

MWR3C - Three Channel Microwave Radiometer Operational

MPL - Micropulse Lidar Operational

DL - Doppler Lidar Partly Operational

CEIL - Vaisala Ceilometer Operational

KAZR - Ka ARM Zenith Radar Operational as per warno.arm.gov

BBSS - Balloon Borne Sounding System Operational

TSI - Total Sky Imager Not Operational

AOS - Aerosol Observing System Partly Operational

AOSMET - AOS Meteorological Measurements Operational

CO - AOS Carbon Monoxide Analyzer Operational

CPC - Condensation Particle Counter Operational

CAPS - Cavity Attenuated Phase Shift Extinction Monitor Not Operational

ACSM - Aerosol Chemical Speciation Monitor Operational

HTD-MA - Humidified Tandem Differential Mobility Analyzer Not Operational

GHG - PICARRO Operational

NEPH - Nephelometer Operational

PSAP - Particle Soot Absorption Photometer Operational

UHSAS - Ultra-High Sensitivity Aerosol Spectrometer Operational

IMPACTOR - AOS Impactor Operational

OZONE - AOS Ozone Operational

CCN - Cloud Condensation Nuclei Particle Counter Not Operational

MASC - Multi Angle Snowflake Camera Operational

PIP - Precipitation Imaging Package Operational

LPM - Laser Precipitation Monitor Operational

GEONOR - Geonor Weighing Gauge Operational

SRS - Snow Depth Sensor Operational

AERI - Atmospheric Emitted Radiance Interferometer Operational

CIMEL - Cimel Sunphotometer Not Operational

MET-AIR - DataHawk Unmanned Aerial System Operational

TBS - Tethered Balloon System Operational

IOP - MASC Not Operational

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* Oliktok Instruments in Detail: *

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INFRASTRUCTURE --- Facilities --- Operational.

2018/01/24, CM-2018-AMF3-VSN-2307: The Delta 100 kW (North) required maintenance. At 23:14 UTC, the generator maintenance began and site ops switched to Generac 100 kW. At 00:25 UTC on 2018/01/24, the generator maintenance ended, so site ops switched back to Delta 100 kW (North).

INFRASTRUCTURE --- Data Systems --- Operational.

2018/01/26, CM-2018-AMF3-VSN-2313: HDD S/N NA7Q2CRS was full, so it was replaced with HDD S/N NA76M6TZ. Site ops will ship HDD S/N NA7Q2CRS via USPS tracking # 9114 9014 9645 0852 3621 04.

2018/01/25, CM-2018-AMF3-VSN-2311: HDD S/N NA7Q2DNC was full, so it was replaced with HDD S/N NA7Q2CRS. Site ops will ship HDD S/N NA7Q2CDN via USPS tracking # 9114 9014 9645 0852 3620 98.

2018/01/25, CM-2018-AMF3-VSN-2309: HDD S/N NA7Q2CDN was full, so it was replaced with HDD S/N NA7Q2DNL. Site ops will ship HDD S/N NA7Q2CDN via USPS tracking # 9114 9014 9645 0852 3620 98.

2018/01/23, CM-2018-AMF3-VSN-2304: HDD S/N NA76LKKK was full, so it was replaced with HDD S/N NA7Q2CDN. Site ops will ship HDD S/N NA76LKKK via USPS tracking # 9114 9014 9645 0952 3620 81.

2018/01/22, CM-2018-AMF3-VSN-2302: HDD S/N NA77YHMS was full, so it was replaced with HDD S/N NA76LKKK. Site ops will ship HDD S/N NA77YHMS via USPS tracking # 9114 9014 9645 0852 3620 81.

INFRASTRUCTURE --- Vehicles --- Partly Operational. Kubota is Down.

INFRASTRUCTURE --- Desktop Computers --- Operational.

SKYRAD --- SKYRAD general --- Operational.

2018/01/21, CM-2018-AMF3-VSN-2301: After heavy blowing snow conditions and the subsequent hard freeze, the housing and domes of the radiometers had become fully encased in ice. After site ops repeatedly tried cleaning the ice off using traditional methods, site ops proceeded to use a heat gun to melt the ice off enough that wipes could be used to clean the domes off completely. This work took place between 2018/01/21 at 23:40 GMT and 2018/01/22 at 00:30 GMT.

SKYRAD --- IRT --- Operational.

SKYRAD --- PIR 1 shaded --- Operational.

SKYRAD --- PIR 2 shaded --- Operational.

2018/01/23, CM-2018-AMF3-VSN-2306: Due to heavy blowing snow conditions, the housing of the PIR2 had become fully packed with snow, restricting fan air flow to the dome. Site ops removed the lid and lifted the clear part of the housing enough to clear out all of the snow that had built up inside. After the snow was cleared, site ops returned the housing to its original configuration. This appears to have been a problem between 2018/01/19 at 00:00 UTC to 2018/01/23 at 23:10 UTC.

SKYRAD --- SOLAR Tracker --- Operational.

SKYRAD --- B&W diffuse --- Operational.

2018/01/26, CM-2018-AMF3-VSN-2314: Due to heavy blowing snow conditions, the housing of the B&W had become fully packed with snow, restricting fan air flow to the dome. Site ops removed the lid and lifted the clear part of the housing enough to clear out all of the snow that had built up inside. After the snow was cleared, site ops returned the housing to its original configuration. This work took between 22:20 and 22:40 UTC on 2018/01/26.

SKYRAD --- NIP --- Operational.

SKYRAD --- PSPg --- Operational.

SKYRAD --- MFRSR --- Not Operational. Removed for the Season, Currently Located at SGP for Calibration.

2017/11/11, DQPR-6657: MFRSR SN #199 was removed for winter calibration. It will be shipped to James Martin at SGP for calibration. FedEx tracking # 812187584198.

TIPTWR --- GNDRAD general --- Operational.

TIPTWR --- MFR2.5m --- Not Operational. Removed for the Season, Currently Located at SGP for Calibration.

TIPTWR --- PIRgnd --- Operational.

TIPTWR --- IRTgnd --- Operational.

TIPTWR --- PSPgnd --- Operational.

MAWS --- Automatic Weather Station --- Operational.

MET --- METTOWER general --- Operational.

MET --- CMH --- Operational.

MET --- Barometer --- Operational.

MET --- TEMPERATURE / HUMIDITY --- Operational.

MET --- WIND INSTRUMENTS (SONIC) --- Operational.

MET --- PWD --- Operational.

MET --- AMC --- Operational.

ECOR --- ECOR --- Operational.

ECOR --- SEBS --- Operational.

MW RADIOMETERS --- MWR3C --- Operational.

LIDAR --- MPL --- Operational.

LIDAR --- Doppler LIDAR --- Partly Operational. Ingest is Off, ORNL Has Been Notified.

LIDAR --- CEIL --- Operational.

RADAR --- KAZR --- Operational as per warno.arm.gov.

2018/01/25, CM-2018-AMF3-VSN-2312: Site ops found about 1/2" of snow on the radome, so the mentor turned off the KAZR, and site ops proceeded to clear the radome of snow cover. Upon completion, the mentor returned the system to normal operation. This work took place between 22:25 and 23:00 UTC on 2018/01/25.

2018/01/24, CM-2018-AMF3-VSN-2308: The power switch over to perform preventative maintenance on the site's generator triggered the KAZR unit to shut down. Technicians restarted KAZR utilities at 00:50 UTC, and then executed the PASCI command file at 00:59 UTC, illuminating the radiate light. This work took place between 2018/01/23 at 23:15 UTC to 2018/01/24 at 01:00 UTC.

2018/01/23, CM-2018-AMF3-VSN-2303: The KAZR transmitter was offline from 05:15 GMT to 14:10 UTC on 2018/01/23. Todd Houchens restarted the transmitter and executed the pax file.

2018/01/21, CM-2018-AMF3-VSN-2300: The KAZR was found with the radiate light off on 2018/01/21 at 23:35 GMT. A technician logged in and executed the PASCI file at 23:36 GMT.

2018/01/20, CM-2018-AMF3-VSN-2299: The KAZR was found with the radiate light off on 2018/01/20 at 22:35 GMT. A technician logged in and executed the PASCI file at 22:36 GMT.

Sonde --- BBSS --- Operational.

2018/01/20, CM-2018-AMF3-VSN-2298: Technicians were unable to launch the 23:30 GMT balloon on 2018/01/19 due to high wind conditions. Winds are >30 mph sustained and gusting >40 mph. Launches will resume when weather conditions permit.

2018/01/20, CM-2018-AMF3-VSN-2297: Technicians were unable to launch the 17:30 GMT balloon on 2018/01/19 due to high wind conditions. Winds are >30 mph sustained and gusting >40 mph. Launches will resume when weather conditions permit.

IMG --- TSI --- Not Operational. New Control Board Shipped to Site.

2017/11/04, DQPR-6625/ CM-2017-AMF3-VSN-2181: Season removal of the TSI—S/N 109, Model # TSI-660, WD80426, ENG0003607. The software was stopped, power and heater switch turned off. Power, data, and ground wires were removed. The base plate hardware and unit were removed, the exterior wires were sealed in a plastic bag, the instrument was stored in its case, and placed in warm storage for the winter. The most recent DQPR status is "waiting - for spares."

AOS --- General --- Partly Operational, Some Instruments Shut Down for Winter.

2017/07/28, DQPR-5858: Unless there are objections from Cindy or the PRB, Joshua King proposes that we abandon this DQPR. The most recent DQPR status is "in progress - assignments."

2017/06/23, DQPR-5858: Richard Wagener asked if anyone has looked at the VM's clock. Could it be that the time lags behind, and then jumps (resyncs), creating gaps in the time record? Richard suggests adding an assignment to Brent to look into possible system level causes for this behavior. The most recent DQPR status is "in progress - assignments."

AOS --- AOSMET --- Operational.

AOS --- CO - Analyzer --- Operational. Gas T Slightly Out of Range.

AOS --- CPC --- Operational.

AOS --- CAPS --- Not Operational, Instrument at BNL Due to Incorrect Data.

2017/11/22, DQPR-6680: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. Mentor (Uin) should close this DQPR once fixed.

2017/08/07, DQPR-5816: The red channel should be usable once the mentor can look at the entire OLI dataset. Related to this issue, the mentor has been informed by the manufacturer that a fix to the ongoing problem with the 3W unit regarding the need for a PSL calibration is being finalized. This fix will require swapping out the 3 DAQ cards. New cards are currently being created by a third party for the manufacturer (Aerodyne). Given this, the OLI CAPS will remain at BNL until the three new cards can be installed. The most recent DQPR status is "in progress - assignments."

2017/07/27, DQPR-5816: From the raw data record, it looks like the CAPS was back in service on 2017/06/26. Joshua King asked Ken Burk if the ingests can be turned back on. Arthur Sedlacek has an assignment to write a DQR. The most recent DQPR status is "in progress - assignments."

2017/05/08, DQPR-5816: The OLI CAPS is at BNL, where one of the sample pumps was replaced, the 3- DAQ cards were mounted with screws, and optics were cleaned. The system is currently undergoing a performance test, and as part of this check, some irregularities (signal fluctuations) were observed. The mentor is in contact with the manufacturer. Once the signal fluctuations

are resolved, a PSL calibration will be performed prior to shipment back to OLI. This PSL calibration is necessary due to a firmware issue. While Aerodyne is testing a new card that corrects the issue, it is not yet ready for prime time. The most recent DQPR status is "in progress - assignments."

AOS --- ACSM --- Operational.

AOS --- GHG-Picarro --- Operational.

AOS --- HT-DMA --- Not Operational. Shut Down for Winter.

AOS --- UHSAS --- Operational.

2017/12/01, DQPR-6618: Adam Theisen asked Cindy/Janek if a secondary period (10/12-10/15) exists, or if this DQPR can this be closed out. The most recent DQPR status is "open - requires action."

2017/11/16, DQPR-6618: The DMF is waiting to receive data from Cindy/Janek for the secondary 10/12 - 10/15 period if they exist on the instrument. The most recent DQPR status is "open - requires action."

2017/10/31, DQPR-6618: There was data missing from 2017/10/06 at 17:00 UTC to 2017/10/08 at 20:07 UTC. The missing files were processed and collected. Joshua King added that he is now not seeing data from the 2017/10/12 - 10/15 period. The most recent DQPR status is “open - requires action.”

AOS --- NEPH --- Operational, but ‘Pressure Difference’ Below Tolerance. Troubleshooting Ongoing.

2017/12/01, DQPR-6681: Janek Uin has an assignment to write DQR D171201.4 on the Impactor datastreams. This DQR would be for documenting the problem despite good data quality. The most recent DQPR status is "in progress - assignments."

2017/11/22, DQPR-6681: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. The mentor (Uin) should close this DQPR once fixed. Janek commented that the limit switch was misaligned, and this was fixed. This issue affected only the impactor position reading, and the impactor was switching properly. He is not sure if the limit switch readings are ingested, and asks what the best course of action is for filing a DQR. The most recent DQPR status is "open - requires action."

AOS --- IMPACTOR --- Operational.

AOS --- Ozone --- Operational.

AOS --- PSAP --- Operational. Pentras was Shut Down for the Winter.

2017/11/22, DQPR-6682: Since 2017/08/29 at 22:07 UTC, the 1-um switch on the Impactor is not working when the Impactor goes to the 1 um position. So the 'read' signal is reporting 3 (indeterminate) in this position. We have verified that the Impactor is working correctly. The mentor was contacted and will work with Operations to fix the signal. This affects processing for PSAP, CAPS and Nephelometer. The mentor (Uin) should close this DQPR once fixed. The most recent DQPR status is "open - requires action."

AOS --- IMPACTOR --- Operational.

AOS --- CCN --- Not Operational.

Precip --- MASC --- Operational.

Precip --- PIP --- Operational.

Precip --- LPM --- Operational, Ingest is Beginning.

Precip --- GEONOR --- Operational.

Precip --- SRS --- Operational, but Some Noise Issues.

2018/01/19, DQPR-6717: Adam Theisen posted an image from the Plot Browser website of the latest problematic data. The most recent DQPR status is “open - requires action.”

2017/12/20, DQPR-6717: James Tonkin ran the ingests and opened a data review on SRS for both OLI.M1 and NSA.C1. They have been assigned to Adam. The NSA data review is EWO0021847, and the OLI data review is EWO0021848. The most recent DQPR status is "open - requires action."

2017/12/15, DQPR-6717: Once we have the exact periods of data outage, a DQR will be submitted to flag the data and inform end users. Adam Theisen added that it looks like ingests are not running for the SRS data. He asked Rob to look into this.

2017/12/12, DQPR-6717: Since 2017/11/22, there have been intermittent periods of noisy measurements/data dropouts. The 3 sensors do not exhibit the issue at the same time; instead, the sensors have sporadic problems. Jennifer Delamere plans to work with the OLI site operators to do some experiments to see if they can isolate the source of the problem.

Other --- AERI --- Operational.

2018/01/25, CM-2018-AMF3-VSN-2310: Per mentor request, site ops replaced the AERI enclosure filter with an updated filter housing and new filters. Additionally, site ops cleaned the internal and external rain sensors. This work took place between 18:25 UTC and 18:35 UTC on 2018/01/25.

2018/01/23, CM-2018-AMF3-VSN-2305: The hatch was repeatedly opening and closing between 19:00 and 19:30 GMT on 2018/01/23, which pointed to the internal rain sensor needing to be cleaned. Site ops took the front cover off the instrument and proceeded to clean the internal rain sensor. After the sensor was cleaned, site ops reinstalled and secured the instrument's cover.

Other --- CIMEL --- Not Operational.

Other --- DataHawk Unmanned Aerial System --- Operational, not a full time instrument.

Other --- TBS --- Operational.

IOP --- MASC --- Not Operational. Arrived at UAF for Repair/Diagnosing.

Barrow

INFORMAL NSA INSTRUMENT STATUS REPORT FOR January 19, 2018 - January 26, 2018
BRIEF STATUS OF INSTRUMENTS AND SITE IN BARROW (C1) AS OF 2018/01/26:
Facilities Operational
Data Systems Operational
Vehicles Partly Operational
Desktop Computers Operational
SKYRAD - SKY Radiometer on Stand for Downwelling Operational
MFRSR - Multifilter Rotating Shadowband Radiometer Not Operational
NIMFR - Normal Incidence Multifilter Radiometer Not Operational
GNDRAD - Ground Radiometer on Stand for Upwelling Operational
MFR10m - Multifilter Radiometer at 10m height Not Operational
MET - Surface & Tower Meteorological Instruments Operational
AMC - Soil, up/downwelling radiation measurements Operational
ECOR-twr - Eddy Correlation Flux System Operational
MWR - Microwave Radiometer Operational
MWRP - Microwave Radiometer Profiler Operational
MWRHF - Microwave Radiometer High Frequency Operational
GVR - G-band Vapor Radiometer Operational
GVRP - G-band Vapor Radiometer Profiler Not Operational
HSRL - High Spectral Resolution Lidar Operational
MPL - Micropulse Lidar Operational
CEIL - Vaisala Ceilometer Operational
DL - Doppler LIDAR Operational
KAZR - Ka ARM Zenith Radar Operational as per warno.arm.gov
KaWSACR - Ka-Band Scanning ARM Cloud Radar Not Operational as per warno.arm.gov
XSAPR - X-Band Scanning ARM Precipitation Radar Not Operational as per warno.arm.gov
BBSS (Autosonde) - Balloon Borne Sounding System Partly Operational
AOS - Aerosol Observing System Operational
CLAP - Continuous Light Absorption Photometer Operational
CPC - Condensation Particle Counter Operational
NEPH - Nephelometer Operational
IMPACTOR - AOS Impactor Operational
TSI - Total Sky Imager Not Operational
TOWERCAM - 40m tower camera Operational
Great White Camera Operational
LPM - Laser Precipitation Monitor Partly Operational

SRS - Snow Depth Sensor Operational
AERI - Atmospheric Emitted Radiance Interferometer Operational
CIMEL - Cimel Sunphotometer Not Operational
IOP - OYESNSA Operational

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* Barrow Instruments in Detail: *
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INFRASTRUCTURE --- Facilities --- Operational.
2018/01/24, CM-2018-NSA-VSN-4518: The garage door had issues, so Walter adjusted the spring pressure on the door, replacing 2 #3 hinges.
2018/01/19, CM-2018-NSA-VSN-4514: The air handler controller had failed (it was stuck open). Walter checked the system, removed, and replaced the Johnson Controller (M9208-BGA-3). He adjusted and balanced the heating system and air handler to keep the shelter temperature at 70 degrees F. This work took place between 18:00 UTC and 19:30 UTC on 2018/01/19.
INFRASTRUCTURE --- Data Systems --- Operational.
2018/01/22, CM-2018-NSA-VSN-4515: A data disk was removed, replaced, and mailed out. There are 73 more available.
INFRASTRUCTURE --- Vehicles --- Partly Operational. Telehandler is in the Shop for Repair.
2018/01/23, CM-2018-NSA-VSN-4517: The Kubota had an issue starting. Walter installed 3 glow plugs (1G679-65512) and plugged in the Kubota outside for over night testing. The vehicle is probably still operational.
INFRASTRUCTURE --- Desktop Computers --- Operational.
SKYRAD --- SKYRAD General --- Operational.
SKYRAD --- IRT --- Operational.
SKYRAD --- PIR 1 Shaded --- Operational.
SKYRAD --- PIR 2 Shaded --- Operational.
SKYRAD --- SOLAR Tracker --- Operational.
SKYRAD --- B&W diffuse --- Operational.
SKYRAD --- NIP --- Operational.
SKYRAD --- PSPg --- Operational.
SKYRAD --- MFRSR --- Not operational. Removed for the Season.
2017/12/01, DQPR-6694: On 2017/11/17 at 18:02 UTC the instrument was removed for the winter and data unavailability begins. The most recent DQPR status is "waiting - for spares."
SKYRAD --- NIMFR --- Not Operational. Removed for the Season.
2017/12/11, DQPR-6709: The instrument was taken down for the winter on 2017/11/17 at 18:02 UTC. The most recent DQPR status is "waiting - for spares."
TIPTWR --- GNDRAD general --- Operational.
TIPTWR --- MFR10m --- Not Operational.
2018/01/05, DQPR-6747: The MFR10m was taken down at approximately 20:00 UTC for the winter. The most recent DQPR status is “waiting - for spares.”
TIPTWR --- PIRgnd --- Operational.
TIPTWR --- IRTgnd --- Operational.
TIPTWR --- PSPgnd --- Operational.
MET --- METTOWER general --- Operational.
MET --- CMH --- Operational.
MET --- Barometer --- Operational.
MET --- TEMPERATURE / HUMIDITY --- Operational.
MET --- WIND INSTRUMENTS (SONIC) --- Operational.
MET --- PWD --- Operational.
MET --- AMC --- Operational.
2018/01/05, DQPR-5694: Adam Theisen added that this problem was linked to the DQR documenting insufficient factory calibrations. He is wondering if this is still an issue or if we can add an end date to this? The most recent DQPR status is “in progress - assignments.”
2017/10/20, DQPR-6589: A lack of sufficient factory calibrations is causing missing and flatlined values in the volumetric water content fields since 2017/06/18. An example plot is posted on the DQPR. The most recent DQPR status is “open - requires action.”
2016/10/10, DQPR-5694: Joshua King adds that vmc from sensor 4 was missing from 14:30 UTC 2016/07/12- 15:30 UTC 2016/09/25. Since returning 2016/09/25, vmc has been decreasing to below 0.3. He is asking mentors if they have thoughts on what is causing this behavior. An attached image can be found on the DQPR page. IM Ken Reichl responds that this is an issue outlined in DQPR-4793 for the analogous site, OLI. The instrument reports soil data as 9999999, or a non-numerical character (for data SGP) for soil systems. The AMC systems may report missing data during warm seasons for instruments that are not

sufficiently calibrated. The OLI datastream has an open-ended DQR D151023.3. Ken asks if he should make one for the NSA data as well, and is the DQR system the best way to characterize this issue?
ECOR --- ECOR-twr --- Operational. Licor 7700 Removed for Winter.
MW RADIOMETERS --- MWR --- Operational.
MW RADIOMETERS --- MWRP --- Operational.
MW RADIOMETERS --- MWRHF --- Operational, but Still Excessive Noise Conditions.
2016/09/30, DQPR-4165: The 150 GHz channel was showing high noise levels probably because of an external source of interference. Adam inquires if there is a path forward to solve the interference issues? The current DQPR status is “in progress-assignments“, and it is open-ended. DQRs D140610.1 and D160426.3 have been reviewed and accepted by the PRB.
MW RADIOMETERS --- GVR --- Operational.
MW RADIOMETERS --- GVRP --- Not Operational. Work is being done on the Software.
2018/01/26, DQPR-6647: There was a problem with the computer access request that Radiometrics had put in, and so it was never granted. It looks like the issue was solved this week and they should be able to access the instrument. The most recent DQPR status is “open - requires action.”
2017/11/18, DQPR-6647: Radiometrics has requested to remotely access the computer. Once they get authorization, they will check why we can't load the interface. The most recent DQPR status is "open - requires action."
2017/11/09, DQPR-6647: Not all variables were available intermittently starting 2017/10/29, followed by consistent data loss on 2017/11/04. Tim Grove was working on ARM coring the computer on November 1st - 2nd. However, the primary issue was the software crashing. Something must have been corrupted last week. Maria is working with Radiometrics now to figure out how to keep the software running properly and to trigger auto restarts. The ''vizmet'' interface should always run in the background on the computer and will take care of daily starts. Once the program starts operating regularly, the end date will need to be updated. The most recent DQPR status is “open - requires action.”
LIDAR --- HSRL --- Operational.
2018/01/19, CM-2018-NSA-VSN-4513: The shelter alarm called Walter at 5am AKDT regarding cold temperatures within the shelter. Walter drove out at 5:30 AM and found the shelter colder than expected. The air handler exhaust was stuck wide open, and the controller had failed. Walter unbolted the controller and closed the louver manually. He added additional heaters to warm the shelter.
LIDAR --- MPL --- Operational. Instrument Polarization Off.
2017/10/03, DQPR-6328: Donna Flynn posted some responses to Rich’s analysis of data quality. Adam posted a figure of ‘Afterpulse Comparison Polarization failing/working for ENA MPL.’
2017/09/29, DQPR-6328: Donna Flynn submitted a summary of her findings of the MPL system at NSA. Richard Coulter added that afterwards that it is not likely that applying the after pulse correction created negative backscatter, but it is more likely the background value that is causing any negative values. The SNR is a highly variable variable, affected by multiple elements, and is and not likely to be useful for system evaluation. The afterpulse measurement process is well established and works well when done properly. More discussion is needed, and the details can be found on the DQPR page. The most recent DQPR status is “waiting - for spares.”
2017/09/13, DQPR-6328: There are no spare MPLs right now. We are planning on sending the NSA MPL for repairs once we have a replacement (probably next month). So Paytsar’s suggestion at this point is to wait until the replacement gets to NSA, then we will be able to properly identify the affected periods. The most recent DQPR status is “waiting - for spares.”
2017/08/02, DQPR-6328: DQR D170802.9 has been submitted for AWR.M1. When start and end dates for NSA.C1 problems are identified, this DQR can be used as a template. The most recent DQPR status is "open - requires action."
2017/07/07, DQPR-6328: During the investigation into the MPLCMASK problem, it was determined that there are potential problems with the NSA C1 and AWR M1 polarizations. From Donna Flynn: The AWR.M1 instrument polarization is off. The values for the linear depolarization ratio are too high. If you compare the water clouds at both AWR.S1 (reasonable values) and AWR.M1(high) on 20151210, this is evident. Additionally, the NSA.C1 data looks suspicious. I have only looked at a few days, but I have found poor agreement with HSRL and clear sky profiles when compared to Rayleigh, which suggests either an overly strong afterpulse or a collimation problem. The most recent DQPR status is "open - requires action."
LIDAR --- CEIL --- Operational.
LIDAR --- Doppler LIDAR --- Operational.
RADAR --- KAZR --- Operational as per warno.arm.gov.
2017/06/12, warno.arm.gov: The RDS1 power supply was replaced and the signal processor is operational. The system will be removed for maintenance for a short time to replace a fan.
RADAR --- KaWSACR --- Not Operational as per warno.arm.gov.
2017/11/13, DQPR-4041: Adam asked Nitin or Karen for information on the start/end times of this issue so that this DQPR can be closed. The most recent DQPR status is "waiting - for spares."
2016/03/12, DQPR-4041: After much coordination with the pedestal manufacturer and while working with the instrument mentors, the azimuth DSA was re-programmed. Once a reprogrammed Azimuth DSA was installed and verified the Elevation DSA was also found to be faulty. It was replaced with another unit and the system now accepts azimuth and elevation commands. The most recent DQPR status is “waiting- for spares.”

RADAR --- XSAPR --- Not Operational as per warno.arm.gov .
2016/08/04, DQPR-4841: The elevation servo amplifier failed, the radar can not scan in elevation. The radar will be upgraded sometime, and will be turned off until then. A DQR was submitted and reviewed by PRB. The DQPR status is "in progress" due to it being open-ended. Adam Theisen's DQR D160719.1 has been reviewed and accepted by the PRB.
Sonde --- BBSS (Autosonde) --- Partly Operational. Software is Having Issues, but Launches Are Still Automatic.
2018/01/27, CM-2018-NSA-VSN-4519: Walter received the MW41 S02/Vaisala Ground Check Set earlier this week. He unpacked and installed the BBSS MW41 S02 in the Great White.
2018/01/22, DQPR-6798: Starting on 2018/01/21, the Autosonde software would not allow the minimum operation temperature to be set and saved. Vaisala tech support is working on a software bug and will remotely fix the issue one a solution is found. Until this is resolved, C1 operational launches are being done on S01. Donna Holdridge asks that S01 launches which occur at 05:30 and 17:30 GMT have their filenames changed to just 'C1'. S01 launches that occur at other times should be left as S01 files. The most recent DQPR status is "open - requires action."
2018/01/19, CM-2018-NSA-VSN-4512: Software patches were sent to the computer, and it was rebooted between 01:15 and 01:25 UTC on 2018/01/19.
AOS --- General --- Operational.
AOS --- AETH --- Operational.
AOS --- CLAP --- Operational.
AOS --- CPC --- Operational.
AOS --- NEPH --- Operational.
AOS --- IMPACTOR --- Operational.
IMG --- TSI --- Not Operational. New Control Board Shipped to Site.
2017/12/22, DQPR-6743/6744: The TSI has not been operational for the winter since 2017/11/07. The most recent DQPR status is "open - requires action."
IMG --- TOWERCAM --- Operational.
IMG --- Great White Camera --- Operational.
Precip --- LPM --- Partly Operational, Heater is Not Working.
Precip --- SRS --- Operational. Ingest Beginning.
Other --- AERI --- Operational.
Other --- CIMEL --- Not Operational.
IOP --- OYESNSA --- Operational.
2018/01/23, CM-2018-NSA-VSN-4516: The mentor requested that their instruments be checked, so Walter checked and found very little frost on the instruments and calm conditions from 2018/01/23 at 22:45 UTC to 2018/01/23 at 23:05 UTC.

5 North Slope Facilities

AMF3

Current and Upcoming Site Visits

Fred Helsel, Erik Webb, Lori Parrott-SNL	2/21/2017	SNL management tour

Current and Upcoming IOPs

De-Icing Comparison Experiment (DICE)

AXIS camera was relocated for Chuck Longs De-Icing Comparison Experiment (DICE).
This will enable Chuck to observe the AMF3 radiometers. Martin Stuefer setup a script to take a photo every 10 minutes they can be viewed at:
http://nanuna.gi.alaska.edu/media/cam/oli_psp/
http://nanuna.gi.alaska.edu/media/cam/oli_skyrad/

Snowflake Settling Speed Experiment: MASC (upcoming) Timothy Garrett- University of Utah

Evaluate NASA PIP Instrument at Oliktok - ENG0003203

Site and Safety Issues

Radiometer ventilators are having issues of filling with snow due to mentor changing fans across all ARM facilities to all be the same.

Unmet Needs

We are running on leased diesel generators while other options are explored.

Site News

MFRSR, MFR, TSI, and Cimel have been removed for the winter. The instruments requiring calibrations have been sent out for calibration. The instruments will be reinstalled in the spring of 2018 when the sun is above the horizon.

Site Staffing

N/A

Tethered Balloon Operations

For the month of January, the TBS crew continued to make progress on the TBS winch rebuild. The winch from the winch trailer in New Mexico was removed and upgraded to match the newly upgraded Oliktok winch. Both winches received new bearings, maintenance to the pawl shaft and housing, a new linear bearing and shaft were installed, and the winch drums were re-centered. The Oliktok winch trailer was also outfitted with additional cross members at the winch's mounting location for additional support. The Oliktok winch has been mounted to the TBS trailer and the wiring has been configured. A test fit with both the helikite and aerostat balloons were performed to check clearances with the reorganized trailer. It was found that there is interference between the balloon support arms and the generator. In addition, the support arms are too long which would create interference with the tether at extreme tether angles. Ideas have been generated to solve this issue and it will be addressed in February.

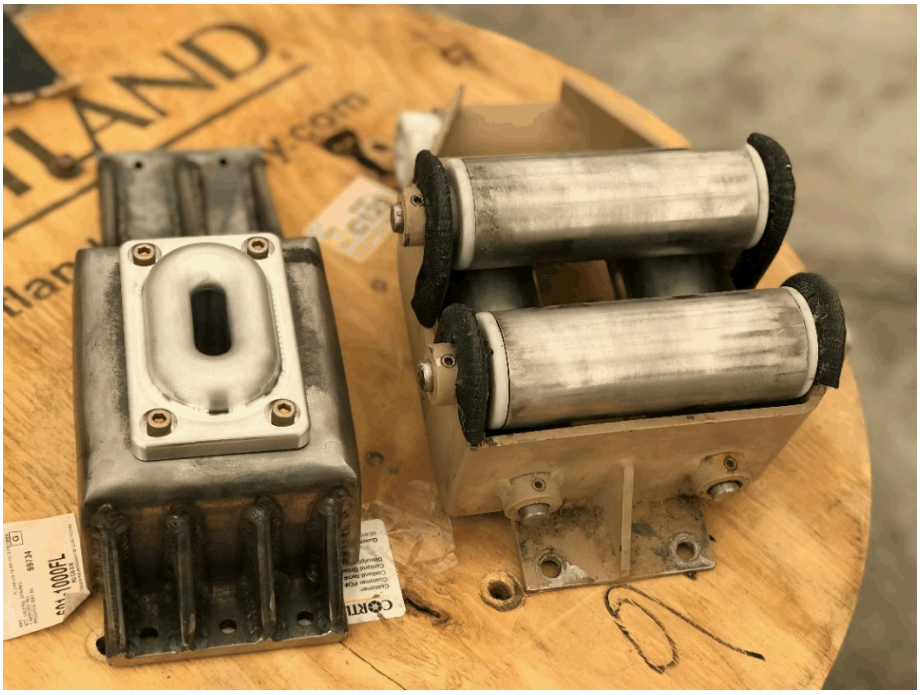

Figure 1: Old levelwind guide (right) vs new levelwind guide (left). New pawl is stronger and eliminates sharp edges that can damage the tether.

Figure 2: Tether in new levelwind guide

Figure 3: Machining of linear bearing shaft to add key slot for new sprockets

Figure 4: New gear reduction system to help better match the levelwind speed to the drum speed.

Results of tethered balloon flights conducted under the AALCO and ICARUS IOPs, as well as results from TBS and UAS flights during the JUBA IOP, were presented at the American Meteorological Society 2018 Annual Meeting.

Barrow

Current and Upcoming Site Visits

Fred Helsel, Erik Webb, Lori Parrott-SNL	2/22/2017	SNL management tour

Current and Upcoming IOPs

De-Icing Comparison Experiment (DICE)
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http://nanuna.gi.alaska.edu/media/cam/oli_skyrad/

SNPP/NPOESS Ground Truth Sonde Launch, Phase 5 – Started Oct 1, 2016

Seismic Probes for NSF– POP Ends, Oct 31, 2018

OYES-Electric Field Study, Texas A&M, Started June 2017

Global Navigation Satellite System (GNSS) – Started July 2017

Site and Safety Issues

Kubota not operational, bad bearing/ roller on track. Planning on shipping tracks to Equipment Source for rebuild.

Unmet Needs

An insulated connex is scheduled to be moved to the auto launcher, manual balloon launches will then be moved to this location.

Duplex bathrooms need upgrades; showers and floors are worn out. Mark Ivey is working with UIC Real Estate for a solution.

Site News

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Site Staffing

NA

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